

- Rule 126 111 86.
125. (New) The method of claim 124, further comprising co-administering the antigen to the mammal.
- 112 87.
126. (New) The method of claim 125, wherein the antigen is encoded by a polynucleotide which is expressed in the mammal.
- 113 88.
127. (New) The method of claim 126, wherein the antigen-encoding polynucleotide comprises the ISS-PN.
- 114 89.
128. (New) The method of claim 125, wherein the antigen is a polypeptide.
- 115 90.
129. (New) The method of claim 124, further comprising co-administering to the mammal a polypeptide comprising an immunogenic epitope of the antigen.
- 116 91.
130. (New) The method of claim 124, further comprising co-administering to the mammal a polynucleotide for production of a polypeptide comprising an immunogenic epitope of the antigen.
- 117 92.
131. (New) The method of claim 130, wherein the polynucleotide comprises the ISS-PN.
- 118 93.
132. (New) The method of claim 124, wherein the ISS-PN comprises a palindromic region comprising the sequence 5'-cytosine-guanine-3'.
- 119 94.
133. (New) The method of claim 132, wherein the palindromic region is at least 6 nucleotides in length.
- 120 95.
134. (New) The method of claim 133, wherein the palindromic region comprises the sequence 5'-purine-purine-C-G-pyrimidine-pyrimidine-3'.

121 ^{96.}
~~135.~~ (New) The method of claim 133, wherein the palindromic region comprises the sequence 5'-pyrimidine-pyrimidine- C-G-pyrimidine-pyrimidine-3'.

122 ^{97.}
~~136.~~ (New) The method of claim 133, wherein the palindromic region comprises the sequence 5'-pyrimidine-pyrimidine-C-G-purine-purine-3'.

123 ^{98.}
~~137.~~ (New) The method of claim 124, wherein the ISS-PN comprises a sequence selected from the group consisting of AACGCC, AACGCT, AACGTC, AACGTT, AGCGCC, AGCGCT, AGCGTC, AGCGTT, GACGCC, GACGCT, GACGTC, GACGTT, GCGGCC, GCGGCT, GCGGTC, and GCGGTT. }

124 ^{99.}
~~138.~~ (New) The method of claim 124, wherein the ISS-PN comprises the sequence 5'-purine-T-C-G-pyrimidine-pyrimidine-3'.

125 ^{100.}
~~139.~~ (New) The method of claim 124, wherein the ISS-PN comprises the sequence 5'-[TCG]_n-3', wherein n is any integer from 1 to 3.

126 ^{101.}
~~140.~~ (New) The method of claim 124, wherein the ISS-PN administered to the skin or mucosa.

127 ^{102.}
~~141.~~ (New) The method of claim 124, wherein the ISS-PN administered to muscle.

128 ^{103.}
~~142.~~ (New) The method of claim 124, wherein the mammal is a human.

129 ^{104.}
~~143.~~ (New) The method of claim 124, wherein the ISS-PN is a plasmid.

130 ^{105.}
~~144.~~ (New) The method of claim 124, wherein the ISS-PN is a cosmid.

131 ^{106.}
~~145.~~ (New) The method of claim 124, wherein the IgE production is associated with an allergy.

107.
132 146. (New) The method of claim 124, wherein the IgE production is associated with asthma.
108.
133 147. (New) A method for treating an antigen-stimulated IgE-related disorder in a mammal, comprising:
administering an immunostimulatory polynucleotide (ISS-PN) comprising the sequence 5'-cytosine-guanine-3' to a mammal sensitized to an antigen, said administering being in an amount sufficient to reduce IgE production stimulated by the antigen and treat the disorder in the mammal.
109.
134 148. (New) The method of claim 147, further comprising co-administering the antigen to the mammal.
110.
135 149. (New) The method of claim 148, wherein the antigen is encoded by a polynucleotide which is expressed in the mammal.
111.
136 150. (New) The method of claim 149, wherein the antigen-encoding polynucleotide comprises the ISS-PN.
112.
137 151. (New) The method of claim 148, wherein the antigen is a polypeptide.
113.
138 152. (New) The method of claim 147, further comprising co-administering to the mammal a polypeptide comprising an immunogenic epitope of the antigen.
114.
139 153. (New) The method of claim 147, further comprising co-administering to the mammal a polynucleotide for production of a polypeptide comprising an immunogenic epitope of the antigen.
115.
140 154. (New) The method of claim 153, wherein the polynucleotide comprises the ISS-PN.
116.
141 155. (New) The method of claim 147, wherein the ISS-PN comprises a palindromic region

comprising the sequence 5'-cytosine-guanine-3'.

142 117.
156. (New) The method of claim 155, wherein the palindromic region is at least 6 nucleotides in length.

143 118.
157. (New) The method of claim 156, wherein the palindromic region comprises the sequence 5'-purine-purine-C-G-pyrimidine-pyrimidine-3'.

144 119.
158. (New) The method of claim 156, wherein the palindromic region comprises the sequence 5'-pyrimidine-pyrimidine- C-G-pyrimidine-pyrimidine-3'.

145 120.
159. (New) The method of claim 156, wherein the palindromic region comprises the sequence 5'-pyrimidine-pyrimidine- C-G-purine-purine-3'.

146 121.
160. (New) The method of claim 147, wherein the ISS-PN comprises a sequence selected from the group consisting of AACGCC, AACGCT, AACGTC, AACGTT, AGCGCC, AGCGCT, AGCGTC, AGCGTT, GACGCC, GACGCT, GACGTC, GACGTT, GGCGCC, GGCGCT, GGCGTC, and GGCGTT.

147 122.
161. (New) The method of claim 147, wherein the ISS-PN comprises the sequence 5'-purine-T-C-G-pyrimidine-pyrimidine-3'.

148 123.
162. (New) The method of claim 147, wherein the ISS-PN comprises the sequence 5'-[TCG]_n-3', wherein n is any integer from 1 to 3.

149 124.
163. (New) The method of claim 147, wherein the ISS-PN administered to the skin or mucosa.

150 125.
164. (New) The method of claim 147, wherein the ISS-PN administered to muscle.

- 151 126.
165. (New) The method of claim 147, wherein the mammal is a human.
- 152 127.
166. (New) The method of claim 147, wherein the ISS-PN is a plasmid.
- 153 128.
167. (New) The method of claim 147, wherein the ISS-PN is a cosmid.
- 154 129.
168. (New) The method of claim 147, wherein the IgE-related disorder is allergy.
- Rule 126 155 130.
169. (New) The method of claim 147, wherein the IgE-related disorder is asthma.
- 156 131.
170. (New) A method for stimulating production of Th1 lymphocytes in a mammal, comprising:
administering an immunostimulatory polynucleotide (ISS-PN) to a mammal sensitized to an antigen,
wherein the ISS-PN comprises the sequence 5'-cytosine-guanine-3', said administering being in an amount
sufficient to stimulate production of Th1 lymphocytes.
- 157 132.
171. (New) The method of claim 170, further comprising co-administering the antigen to the
mammal.
- 158 133.
172. (New) The method of claim 171, wherein the antigen is encoded by a polynucleotide which
is expressed in the mammal.
- 159 134.
173. (New) The method of claim 172, wherein the antigen-encoding polynucleotide comprises the
ISS-PN.
- 160 135.
174. (New) The method of claim 171, wherein the antigen is a polypeptide.
- 161 136.
175. (New) The method of claim 170, further comprising co-administering to the mammal a
polypeptide comprising an immunogenic epitope of the antigen.

137.
162 176. (New) The method of claim 170, further comprising co-administering to the mammal a polynucleotide for production of a polypeptide comprising an immunogenic epitope of the antigen.

138.
163 177. (New) The method of claim 176, wherein the polynucleotide comprises the ISS-PN.

139.
164 178. (New) The method of claim 170, wherein the ISS-PN comprises a palindromic region comprising the sequence 5'-cytosine-guanine-3'.

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140.
165 179. (New) The method of claim 178, wherein the palindromic region is at least 6 nucleotides in length.

141.
166 180. (New) The method of claim 179, wherein the palindromic region comprises the sequence 5'-purine-purine-C-G-pyrimidine-pyrimidine-3'.

142.
167 181. (New) The method of claim 178, wherein the palindromic region comprises the sequence 5'-pyrimidine-pyrimidine-C-G-pyrimidine-pyrimidine-3'.

143.
168 182. (New) The method of claim 178, wherein the palindromic region comprises the sequence 5'-pyrimidine-pyrimidine-C-G-purine-purine-3'.

144.
169 183. (New) The method of claim 170, wherein the ISS-PN comprises a sequence selected from the group consisting of AACGCC, AACGCT, AACGTC, AACGTT, AGCGCC, AGCGCT, AGCGTC, AGCGTT, GACGCC, GACGCT, GACGTC, GACGTT, GGCGCC, GGCGCT, GGCGTC, and GGCGTT.

145.
170 184. (New) The method of claim 170, wherein the ISS-PN comprises the sequence 5'-purine-T-C-G-pyrimidine-pyrimidine-3'.

146.
171 185. (New) The method of claim 170, wherein the ISS-PN comprises the sequence 5'-[TCG]_n-3',

wherein n is any integer from 1 to 3.

- 172 ^{147.}
~~186.~~ (New) The method of claim 170, wherein the ISS-PN administered to the skin or mucosa.
- 173 ^{148.}
~~187.~~ (New) The method of claim 170, wherein the ISS-PN administered to muscle.
- 174 ^{149.}
~~188.~~ (New) The method of claim 170, wherein the mammal is a human.
- 175 ^{150.}
~~189.~~ (New) The method of claim 170, wherein the ISS-PN is a plasmid.
- 176 ^{151.}
~~190.~~ (New) The method of claim 170, wherein the ISS-PN is a cosmid.
- 177 ^{152.}
~~191.~~ (New) The method of claim 170, wherein the mammal is suffering from an allergy to the antigen.
- 178 ^{153.}
~~192.~~ (New) The method of claim 170, wherein the mammal is suffering from antigen-related asthma.
- 179 ^{154.}
~~193.~~ (New) A method for suppressing production of Th2 lymphocytes in a mammal, comprising:
administering an immunostimulatory polynucleotide (ISS-PN) to a mammal sensitized to an antigen,
wherein the ISS-PN comprises the sequence 5'-cytosine, guanine-3', said administering being in an amount
sufficient to suppress production of Th2 lymphocytes.
- 180 ^{155.}
~~194.~~ (New) The method of claim 103, further comprising co-administering the antigen to the
mammal.
- 181 ^{156.}
~~195.~~ (New) The method of claim 194, wherein the antigen is encoded by a polynucleotide which
is expressed in the mammal.

157,
182 196. (New) The method of claim 195, wherein the antigen-encoding polynucleotide comprises the
ISS-PN.

158
183 197. (New) The method of claim 194, wherein the antigen is a polypeptide.

159
184 198. (New) The method of claim 193, further comprising co-administering to the mammal a
polypeptide comprising an immunogenic epitope of the antigen.

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160.
185 199. (New) The method of claim 193, further comprising co-administering to the mammal a
polynucleotide for production of a polypeptide comprising an immunogenic epitope of the antigen.

161.
186 200. (New) The method of claim 199, wherein the polynucleotide comprises the ISS-PN.

162.
187 201. (New) The method of a claim 193, wherein the ISS-PN comprises a palindromic region
comprising the sequence 5'-cytosine-guanine-3'.

163.
188 202. (New) The method of claim 201, wherein the palindromic region is at least 6 nucleotides in
length.

164.
189 203. (New) The method of claim 201, wherein the palindromic region comprises the sequence 5'-
purine-purine-C-G-pyrimidine-pyrimidine-3'.

165.
190 204. (New) The method of claim 201, wherein the palindromic region comprises the sequence 5'-
pyrimidine-pyrimidine- C-G-pyrimidine-pyrimidine-3'.

166.
191 205. (New) The method of claim 201, wherein the palindromic region comprises the sequence 5'-
pyrimidine-pyrimidine-C-G-purine-purine-3'.

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~~192~~ ^{167.}
~~206.~~ (New) The method of claim 193, wherein the ISS-PN comprises a sequence selected from the group consisting of AACGCC, AACGCT, AACGTC, AACGTT, AGCGCC, AGCGCT, AGCGTC, AGCGTT, GACGCC, GACGCT, GACGTC, GACGTT, GGCGCC, GGCGCT, GGCGTC, and GGCGTT.

~~193~~ ^{168.}
~~207.~~ (New) The method of claim 193, wherein the ISS-PN comprises the sequence 5'-purine-T-C-G-pyrimidine-pyrimidine-3'.

~~194~~ ^{169.}
~~208.~~ (New) The method of claim 193, wherein the ISS-PN comprises the sequence 5'-[TCG]_n-3', wherein n is any integer from 1 to 3.

~~195~~ ^{170.}
~~209.~~ (New) The method of claim 193, wherein the ISS-PN administered to the skin or mucosa.

~~196~~ ^{171.}
~~210.~~ (New) The method of claim 193, wherein the ISS-PN administered to muscle.

~~197~~ ^{172.}
~~211.~~ (New) The method of claim 193, wherein the mammal is a human.

~~198~~ ^{173.}
~~212.~~ (New) The method of claim 193, wherein the ISS-PN is a plasmid.

~~199~~ ^{174.}
~~213.~~ (New) The method of claim 193, wherein the ISS-PN is a cosmid.

~~200~~ ^{175.}
~~214.~~ (New) The method of claim 193, wherein the mammal is suffering from an allergy to the antigen.

~~201~~ ^{176.}
~~215.~~ (New) The method of claim 193, wherein the mammal is suffering from antigen-related asthma.

II. REMARKS

Claims 124-215 are now pending in this application, after entry of the above amendments.